WHAT IS CLAIMED IS:

1. A system for optimizing state machine transitional performance in a high speed link (HSL) protocol stack at an application node disposed in a network, comprising:

an input event decoder for decoding an input event including at least a service access point (SAP) and a connection identifier (CID) associated with a service provider layer operating pursuant to a protocol layer service for a particular connection link;

a state decoder for decoding state-specific context information retrieved by a context switch control block from a context memory based on said SAP and CID; and

a generic state machine (GSM) logic structure operable to be personalizable based said state-specific context information, said GSM logic structure having a state logic package partitionable into a control plane and a data plane, said control plane operating to process said decoded input event based on said decoded state-specific context information and said data plane operating to process data operations relating to said protocol layer service, wherein said control and data planes are operable to exchange layer parameters for said service provider layer.

2. The system for optimizing state machine transitional performance in an HSL protocol stack at an application node disposed in a network as set forth in claim 1, further comprising a tester block for performing tests on input parametric information extracted from said decoded input event and said decoded state-specific context information.

3. The system for optimizing state machine transitional performance in an HSL protocol stack at an application node disposed in a network as set forth in claim 2, further comprising an operations module for performing cyclical redundancy check (CRC) operations and protocol overhead operations on input parametric information extracted from said decoded input event and said decoded state-specific context information.

4. The system for optimizing state machine transitional performance in an HSL protocol stack at an application node disposed in a network as set forth in claim 3, wherein said control plane is operable to receive test output from said tester block.

5. The system for optimizing state machine transitional performance in an HSL protocol stack at an application node disposed in a network as set forth in claim 4, wherein said control plane is operable to provide control input to said operations module.

6. The system for optimizing state machine transitional performance in an HSL protocol stack at an application node disposed in a network as set forth in claim 5, further including:

an output event encoder for generating a coded output event based on output provided by said control plane and said operations module; and

a state encoder for generating a coded next-state information based on next-state output provided by said control plane and on parametric output provided by said operations module.

7. The system for optimizing state machine transitional performance in an HSL protocol stack at an application node disposed in a network as set forth in claim 6, wherein a first plurality of delay registers are disposed between said tester block and said control plane's protocol state machine and a second plurality of delay registers are disposed between said operations module and said control plane's protocol state machine, said first and second plurality of delay registers operating to control routing delays between said control and data planes.

8. The system for optimizing state machine transitional performance in an HSL protocol stack at an application node disposed in a network as set forth in claim 6, wherein said GSM logic structure is personalizable as a Service Specific Coordination Function (SSCF) control state machine based on said state-specific context information retrieved from said context memory.

9. The system for optimizing state machine transitional performance in an HSL protocol stack at an application node disposed in a network as set forth in claim 6, wherein said GSM logic structure is personalizable as an Asynchronous Transfer Mode (ATM) Adaptation Layer (AAL) control state machine based on said state-specific context information retrieved from said context memory.

10. The system for optimizing state machine transitional performance in an HSL protocol stack at an application node disposed in a network as set forth in claim 6, wherein said GSM logic structure is personalizable as a Service Specific Connection Oriented Protocol (SSCOP) control state machine based on said state-specific context information in said context memory.

11. The system for optimizing state machine transitional performance in an HSL protocol stack at an application node disposed in a network as set forth in claim 6, wherein said GSM logic structure is personalizable as a state machine operating to transfer SSCOP layer data based on said state-specific context information in said context memory.

12. The system for optimizing state machine transitional performance in an HSL protocol stack at an application node disposed in a network as set forth in claim 6, wherein said GSM logic structure is personalizable as a state machine operating to transfer SSCF layer data based on said state-specific context information in said context memory.

13. The system for optimizing state machine transitional performance in an HSL protocol stack at an application node disposed in a network as set forth in claim 6, wherein said GSM logic structure is personalizable as a state machine operating to transfer AAL layer data based on said state-specific context information in said context memory.

14. A method for optimizing state machine transitional performance in a high speed link (HSL) protocol stack at an application node disposed in a network, comprising the steps of:

pursuant to effectuating a protocol layer service with respect to said HSL protocol stack, receiving coded input event information and coded state-specific context information relating to a select protocol layer to be decoded by a decoder block;

personalizing a generic state machine (GSM) logic structure based on said decoded state-specific context information, said GSM logic structure having a state logic package partitionable into a control plane and a data plane, said control plane operating to process at least a portion of said decoded input event information based on said decoded state-specific context information and said data plane operating to process data operations relating to said protocol layer service;

providing, substantially in parallel with said control plane's operation, at least a portion of said decoded input event information and said decoded state-specific context information to a tester block for performing tests on input parametric information extracted from said portions of said decoded input event information and said decoded state-specific context information, wherein said tester block is operable to provide tester output to said control plane's state machine;

providing, substantially in parallel with said control plane's operation, at least a portion of said decoded input event information and said decoded state-specific context information to an operations module for performing protocol-specific operations on input parametric information extracted from said portions of said decoded input event information and said decoded state-specific context information and based on control signal information provided by said control plane's state machine; and

generating coded output event information and coded next-state context information based on outputs provided by said control plane's state machine and said operations module, wherein said coded output event information and said coded next-state context information are operable to be provided as an input to an adjacent protocol layer associated with said protocol layer service.

15. The method for optimizing state machine transitional performance in an HSL protocol stack at an application node disposed in a network as set forth in claim 14, wherein said decoder block comprises an input event decoder for decoding said input event information and a state decoder for decoding said state-specific context information.

16. The method for optimizing state machine transitional performance in an HSL protocol stack at an application node disposed in a network as set forth in claim 15, wherein said protocol-specific operations performed by said operations module comprises at least one cyclical redundancy check (CRC) operation.

17. The method for optimizing state machine transitional performance in an HSL protocol stack at an application node disposed in a network as set forth in claim 16, wherein said protocol-specific operations performed by said operations module comprises protocol overhead operations.

18. The method for optimizing state machine transitional performance in an HSL protocol stack at an application node disposed in a network as set forth in claim 17, wherein said tester block is operable to perform at least one of a plurality of sequence number tests and other tests on inputs.

19. The method for optimizing state machine transitional performance in an HSL protocol stack at an application node disposed in a network as set forth in claim 18, wherein said select protocol layer comprises a Service Specific Connection Oriented Protocol (SSCOP) layer.

20. The method for optimizing state machine transitional performance in a high speed link (HSL) protocol stack at an application node disposed in a network as set forth in claim 18, wherein said select protocol layer comprises an Asynchronous Transfer Mode (ATM) Adaptation Layer (AAL).

21. The method for optimizing state machine transitional performance in a high speed link (HSL) protocol stack at an application node disposed in a network as set forth in claim 18, wherein said select protocol layer comprises a Service Specific Coordination Function (SSCF) layer.